

CLAIMS

I claim:

1. A method for partitioning, comprising:
 - 5 receiving a data access request, said data access request includes one or more variables in a first format;
 - determining one or more data stores of a set of data stores to service said data access request, said step of determining includes accessing one or more mappings of said one or more variables to said set of data stores and using said mappings to evaluate
 - 10 partition expressions for said data stores; and
 - sending information for said data access request to said one or more data stores determined to service said data access request.
 2. A method according to claim 1, wherein:
 - 15 said data access request includes a search operation
 3. A method according to claim 1, wherein:
 - said data access request includes adding new data to a data store.
 4. A method according to claim 1, wherein:
 - 20 said data access request includes accessing data in multiple data stores.
 5. A method according to claim 1, wherein:
 - said data access request includes accessing data in only one data store.
 6. A method according to claim 1, wherein:
 - 25 said set of data stores includes a relational database.

7. A method according to claim 1, wherein:
said set of data stores includes at least two relational databases.

5 8. A method according to claim 1, wherein:
said one or more data stores determined to service said data access request
includes a relational database.

9. A method according to claim 1, wherein:
10 said one or more data stores determined to service said data access request
includes a relational database; and
said step of sending includes translating said data access request to a format
suitable for said relational database and communicating said translated data access
request to said relational database.

15 10. A method according to claim 9, further comprising:
receiving a result from said relational database.

11. A method according to claim 9, further comprising:
20 receiving a result from said relational database; and
translating said result to said logical object class format.

12. A method according to claim 1, wherein:
said data access request is from an Identity System.

25 13. A method according to claim 1, wherein:
said data access request is from an Identity and Access System.

14. A method according to claim 1, wherein:
said set of data stores store identity information.

5 15. A method according to claim 1, wherein:
said partition expressions are in LDAP filter format.

16. A method according to claim 1, wherein:
said first format is a logical object class format that is compatible with LDAP
10 filter format.

17. A method according to claim 1, wherein:
said one or more data stores determined to service said data access request
includes a relational database; and

15 said step of sending includes creating a custom filter for said data access request
that is customized for said relational database to only include one or more variables
mapped to said relational database.

20 18. A method according to claim 1, wherein:
said data access request includes a filter;
said filter includes said one or more variables; and
said using of said mappings to evaluate partition expressions for said data stores
includes determining whether said filter overlaps with said partition expressions based on
said mappings.

25 19. A method according to claim 18, wherein determining whether said filter
overlaps with said partition expressions based on said mappings comprises:

determining whether child sub-filters of said filter expression overlap with said partition expressions and combining results of said determination of whether child sub-filters overlap to determine whether said filter expression overlaps with said partition expressions, if said filter expression is a composite expression.

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20. A method according to claim 18, wherein determining whether said filter overlaps with said partition expressions based on said mappings comprises:

10 performing a partition compare function using said filter expression and a first partition expression to determine whether said filter expression overlaps with said first partition expression, if said filter expression and said first partition expression are both simple expressions; and

15 performing said partition compare function by treating said filter expression as an input partition expression and treating said first partition expression as an input filter expression in order to determine whether said filter expression overlaps said first partition expression, if said first partition expression is a composite expression.

21. One or more processor readable storage devices having processor readable code embodied on said processor readable storage devices, said processor readable code for programming one or more processors to perform a method comprising:

20 receiving a data access request, said data access request includes one or more variables in a first format;

25 determining one or more data stores of a set of data stores to service said data access request, said step of determining includes accessing one or more mappings of said one or more variables to said set of data stores and using said mappings to evaluate partition expressions for said data stores; and

sending information for said data access request to said one or more data stores determined to service said data access request.

22. One or more processor readable storage devices according to claim 21, wherein:

5 said one or more data stores determined to service said data access request includes a relational database; and

said step of sending includes translating said data access request to a format suitable for said relational database based on said mappings and communicating said translated data access request to said relational database.

10 23. One or more processor readable storage devices according to claim 21, wherein:

said partition expressions are in LDAP filter format.

24. One or more processor readable storage devices according to claim 21, 15 wherein determining whether said filter overlaps with said partition expressions based on said mappings comprises:

20 performing a partition compare function using said filter expression and a first partition expression to determine whether said filter expression overlaps with said first partition expression, if said filter expression and said first partition expression are both simple expressions; and

performing said partition compare function by treating said filter expression as an input partition expression and treating said first partition expression as an input filter expression in order to determine whether said filter expression overlaps said first partition expression, if said first partition expression is a composite expression.

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25. An apparatus that can partition, comprising:

one or more storage devices; and

one or more processors in communication with said one or more storage devices, said one or more processors perform a method comprising:

accessing a data access request, said data access request includes one or more variables in logical object class format,

5 determining one or more data stores of a set of data stores to service said data access request, said step of determining includes accessing one or more mappings of said one or more variables to said set of data stores and using said mappings to evaluate partition expressions for said data stores, and

10 sending information for said data access request to said one or more data stores determined to service said data access request.

26. An apparatus according to claim 25, wherein:

said one or more data stores determined to service said data access request includes a relational database; and

15 said step of sending includes translating said data access request to a format suitable for said relational database and communicating said translated data access request to said relational database.

27. An apparatus according to claim 25, wherein determining whether said 20 filter overlaps with said partition expressions based on said mappings comprises:

performing a partition compare function using said filter expression and a first partition expression to determine whether said filter expression overlaps with said first partition expression, if said filter expression and said first partition expression are both simple expressions; and

25 performing said partition compare function by treating said filter expression as an input partition expression and treating said first partition expression as an input filter expression in order to determine whether said filter expression overlaps said first partition

expression, if said first partition expression is a composite expression.

28. An apparatus that can partition a data access request, said data access request includes one or more variables in a first format, comprising:

5 means for determining one or more data stores of a set of data stores to service said data access request, said step of determining includes accessing one or more mappings of said one or more variables to said set of data stores and using said mappings to evaluate partition expressions for said data stores; and

10 means for sending said data access request to said one or more data stores determined to service said data access request.

29. A method for partitioning, comprising:

receiving a filter expression for a data access request;

15 determining whether said filter expression overlaps with one or more partition expressions if said filter expression is a simple expression;

determining whether child sub-filters of said filter expression overlap with said one or more partition expressions and combining results of said determination of whether child sub-filters overlap to determine whether said filter expression overlaps with said one or more partition expressions, if said filter expression is a composite expression; and

20 providing information for said filter expression to one or more data sources associated with one or more partition expressions that overlap with said filter expression.

30. A method according to claim 29, wherein:

said one or more data stores include a relational database; and

25 said step of providing includes translating said data access request to a format suitable for said relational database and communicating said translated data access request to said relational database.

31. A method according to claim 30, further comprising:
receiving a result from said relational database.

5 32. A method according to claim 30, further comprising:
receiving a result from said relational database; and
translating said result to a logical object class format, said data access request is in
said logical class format.

10 33. A method according to claim 29, wherein:
said data access request is from an Identity System.

34. A method according to claim 29, wherein:
said data access request is from an Identity and Access System.

15 35. A method according to claim 29, wherein:
said set of data stores store identity information.

36. A method according to claim 29, wherein said combining results
20 comprises:
determining that said filter expression overlaps with a first partition expression if
all child sub-filters overlaps with said first partition expression and said child sub-filters
form said filter expression based on an AND operator; and
determining that said filter expression overlaps with a first partition expression if
25 any of said child sub-filters overlap with said first partition expression and said child sub-
filters form said filter expression based on an OR operator.

37. A method according to claim 29, wherein said step of providing comprises:

removing terms not supported by a first data source from said information for said filter expression provided to said first data source.

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38. One or more processor readable storage devices having processor readable code embodied on said processor readable storage devices, said processor readable code for programming one or more processors to perform a method comprising:

receiving a filter expression for a data access request;

10 determining whether said filter expression overlaps with one or more partition expressions if said filter expression is a simple expression;

determining whether child sub-filters of said filter expression overlap with said one or more partition expressions and combining results of said determination of whether child sub-filters overlap to determine whether said filter expression overlaps with said 15 one or more partition expressions, if said filter expression is a composite expression; and

providing information for said filter expression to one or more data sources associated with one or more partition expressions that overlap with said filter expression.

39. One or more processor readable storage devices according to claim 38, 20 wherein:

said one or more data stores include a relational database; and

said step of providing includes translating said data access request to a format suitable for said relational database and communicating said translated data access request to said relational database.

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40. One or more processor readable storage devices according to claim 38, wherein said combining results comprises:

determining that said filter expression overlaps with a first partition expression if all child sub-filters overlaps with said first partition expression and said child sub-filters form said filter expression based on an AND operator; and

5 determining that said filter expression overlaps with a first partition expression if any of said child sub-filters overlap with said first partition expression and said child sub-filters form said filter expression based on an OR operator.

41. One or more processor readable storage devices according to claim 38, wherein said step of providing comprises:

10 removing terms not supported by a first data source from said information for said filter expression provided to said first data source.

42. A method for partitioning, comprising:

receiving a filter expression for a data access request;

15 accessing a partition expressions for a first data source of a set of data sources;

performing a partition compare function using said filter expression and said partition expression to determine whether said filter expression overlaps with said partition expression, if said filter expression and said partition expression are both simple expressions;

20 performing said partition compare function by treating said filter expression as an input partition expression and treating said partition expression as an input filter expression in order to determine whether said filter expression overlaps said partition expression, if said partition expression is a composite expression; and

25 providing information for said filter expression to said first data source if said filter expression overlaps with said filter expression.

43. A method according to claim 42, further comprising:

performing said partition compare function for each child sub-filter of said filter expression and combining results of said step of performing said partition compare function for each child sub-filter to determine whether said filter expression overlaps with said partition expression, if said filter expression is a composite expression.

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44. A method according to claim 42, wherein:

said one or more data stores include a relational database; and

said step of providing includes translating said data access request to a format suitable for said relational database and communicating said translated data access request to said relational database.

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45. A method according to claim 42, further comprising:

receiving a result from said relational database.

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46. A method according to claim 42, wherein said step of providing comprises:

removing terms not supported by a first data source from said information for said filter expression provided to said first data source.

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